

Gateway

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The ARRL Packet-Radio Newsletter

EARLY JUNE LAUNCH FOR PHASE 3C

All is in readiness for the launch of AMSAT's Phase 3C satellite in the first week of June. The fueling operation of the joint AMSAT-NA and AMSAT-DL teams was completed without incident and the spacecraft stands ready for launch as soon as the launcher itself is ready. Sources indicate June 7 or June 8 are the most likely launch dates. The actual launch date will be firm when the next launch, that of an Intelsat spacecraft on the V-23, has been accomplished. That launch is currently slated for May 17 or 18. If the launch of Phase 3C on mission V-22 does occur on or about June 7 as now planned, the launch window will be about 1200 UTC which is morning in Kourou, French Guiana, the launch facility of the European Space Agency.

Phase 3C will be placed into general operation about one month after launch depending on the number and timing of on-orbit kick motor burns that are implemented. The operating frequencies have been published in the last issue of Gateway (Volume 4, number 16).

from AMSAT NA News Service

OSCAR 10 MAKING A COMEBACK

AMSAT-OSCAR 10 is slowly returning to life. Its beacon has been heard regularly in recent weeks indicating that it is getting sufficient sunlight on its solar panels to power up the transponder. AO-10 command stations have been asked to determine if they believe AO-10 will be available for use and, if so, when.

from AMSAT NA News Service

NO TNC 1 VERSION 4 FIRMWARE

The TAPR Board of Directors has concluded that the existing firmware for the TNC 1 is adequate and that further expenditures of funds or technical talent to develop Version 4 firmware, in view of the benefits to be obtained, is unwarranted.

by Andy Freeborn, N0CCZ
from Packet Status Register

TAPR TO COORDINATE GROUP PURCHASE OF PS-186 KITS

TAPR is in the process of organizing a group purchase of bare boards and hard-to-find components for the PS-186 packet switch in order to make this new technology available to the advanced experimenter for software and network development.

The PS-186 is a five-port high speed (>1 Mbit/s) packet switch that was designed by Mike Brock, WB6HHV, Franklin Antonio, N6NKF, and Tom Lafleur, KA6IQA. The card is described in detail in the ARRL 6th Computer Networking Conference proceedings. Briefly, the PS-186 is built around an 8-MHz 80186 processor and up to 1 Mbyte of memory. I/O support is provided by two 8530 SCC chips which are interfaced with DMA. This provides four HDLC/asynchronous/synchronous ports; the fifth port is asynchronous only. Also provided are an SCSI port (for disk or multiple board interfacing), a real-time clock, a watchdog timer and a remote reset circuit.

Advanced Electronics Applications, Inc (AEA) has acquired the rights to produce the card commercially. TAPR is organizing a group purchase of bare printed circuit boards and PALs directly from AEA.

The kit will include an electrically tested six-layer printed circuit board, programmed PALs, hard-to-find LSIs and a documentation package. A complete list of parts is included in the documentation. The package will not contain any of the readily available components such as connectors, LEDs, resistors or commonly available chips.

This group purchase is being organized for experienced experimenters only. Neither AEA nor TAPR will be able to offer any repair services. This is not a kit like the TNC 2 with detailed step-by-step assembly instructions. The ability to rework the six-layer printed circuit board should be considered carefully by the potential builder (sockets are highly recommended).

To keep overhead to a minimum, the kit is being offered with only two options: 1) bare board and PALs or 2) bare board, PALs and hard-to-find LSIs. No other options are available; individual LSIs will not be sold separately.

The current estimate is that Option 1 will sell for \$130 and Option 2 will sell for \$180. The additional parts necessary to build the board up to the minimum configuration would be at additional cost. Bare RS-232 daughter boards for the PS-186 will be available separately for \$10. Up to four daughter boards may be mounted on the PS-186.

If you are interested in participating in this group purchase, please send a post card to TAPR, PO Box 22888, Tucson, AZ 85734, indicating the number of kits you would like. Send no money at this time. Once the demand has been determined,

TAPR will contact all interested parties with firm price and order cut-off date. There is no obligation until a firm price is determined and an order is placed, but please be realistic about your needs.

from Packet Status Register

TEXAS PACKET RADIO MEETING2

A meeting of Texas packet radio movers and shakers will be held in Brady, Texas on May 21-22 starting at noon on Saturday. All digipeater, PBBS, network and node operators are invited to join this conclave to discuss the present and future of packet radio in the Lone Star State. Talk-in frequencies are 146.30/90 and 147.76/16 MHz. For more information contact Harry Ridenour, NØCCW @ W5IFP, telephone 512-654-4405 or Walter Holmes, WD5GAZ @ WB5BBW.

from Paul Guido, N5IUT

RSGB DATA SYMPOSIUM PROGRAM ANNOUNCED

The program for the First RSGB Data Symposium to be held July 22-23 at the Harrow School in northwest London has been announced (refer to Gateway, Volume 4, Number 13, for additional information). Some lectures have yet to be confirmed, but, so far, the program includes the following:

- o "The Other Side Of The Coin (What Went Wrong In The USA)" by Gwyn Reedy, W1BEL, of Pac-Comm Packet Radio Systems, Inc.
- o "The Irish Packet Scene" by J. B. Clarke, EI5CI
- o "High Speed Linking In The Amateur Packet Network" by Ed Harland, G3VPF
- o "Packet Systems - Which Way Now?" by Ed Harland, G3VPF
- o "9600 Baud Packet Radio Modem Design" by James Miller, G3RUH
- o "Keeping In Touch" by John Kirk, G4LPQ
- o "Commercial Aspects Of Data Transmissions" by John Coll of Xon Software
- o "RTTY Night Owl Theatre" (RTTY Pictures) by Lindsey Rohrlach, G1XPG
- o "Overture And Beginners" (Video On Packet Radio) by Phil Bridges, G6DLJ
- o "The Trial And Tribulations Of A Mailbox System Operator" by Andy Witt, G1DIL
- o "Rail Block Signalling" by Mr. Giles of British Railway
- o "Satellite Digital Communications" (presenter to be finalized)
- o "A Short History Of Telegraphy" by Alan Hobbs, G8GOJ, and Sam Hallas, G8EXV, presented by T. I. Lundegard, G3GJW
- o "AMPRNET" by Gareth Howell, G6KVK

- o "The Application Of AMTOR In The Amateur Radio Global Message Handling Network" by Peter Martinez, G3PLX (presenter to be finalized)

Full details and a booking form can be obtained by sending a large self-address envelope and 3 IRCs to the Membership Services Dept, RSGB Headquarters, Lambda House, Cranborne Road, Potters Bar, Hertsfordshire, EN6 3JE, England.

NEW AEA PK-232 FIRMWARE REVISION AND HARDWARE FIX

Advanced Electronic Applications, Inc (AEA) has recently released a new revision of the firmware for its PK-232 multimode controller. The following information describes changes and enhancements in the new firmware release.

NAVTEX - An additional mode, a superset protocol above SITOR Mode B. NAVTEX is a recently developed international marine weather broadcast service now being installed at marine coastal stations areas around the world. Operating on a worldwide standard frequency of 518 kHz, NAVTEX stations regularly broadcast navigation and weather information to ships at sea. In the United States, NAVTEX services are now provided by the United States Coast Guard through their coastal stations.

AFILTER - a new command enables an ASCII character filter similar to MFILTER, except that AFILTER functions in all modes. AFILTER allows you to prevent unwanted ASCII characters from being sent to the terminal or computer.

BBSMSGs - a new command conforms to TAPR firmware release 1.1.5 and permits removal of some of the "friendliness" from the command responses sent from the PK-232 to the associated host or computer. This can improve compatibility with certain older versions of bulletin board software written by WØRLI and WA7MBL.

CBELL - now sends three BELL characters from the PK-232 to the terminal or computer upon disconnections as well as connections.

MFILTER \$80 no longer filters the TAB character (ASCII \$09).

PRTYPE has been expanded to support more printers including the Anadex, Citizen, NEC and the HP-Thinkjet.

Five Morse code characters for Swedish and German Morse have been added to the National Morse alphabets CODE command.

In the KISS and RAW HDLC modes, activity on the RS-232 link between the host computer and the PK-232 is now shown by the STA and CON LEDs.

In Morse, Baudot and ASCII, the delay at the end of a transmission before returning to receive has been shortened from 1 second to 0.2 second.

The tab character (ASCII \$09, <CTRL-I>) is now accepted as a delimiter in command strings, just as the space character and comma.

Defaults Changed: The default values of parameters MPROTO, RESPTIME, PERSIST and PPERSIST have been changed.

The NAVTEX Mode

NAVTEX, which stands for NAVIGATIONAL TELEX, is the name commonly used to describe an international system of direct-printing telegraphy service for the distribution of navigational and meteorological warnings and other urgent information to ships at sea. Because NAVTEX is a relatively new service, it not yet fully operational in all areas of the world. Currently, NAVTEX covers most of Europe and the East Coast of the United States. Stations covering the West Coast of the US are under construction and scheduled to be operational in 1988.

NAVTEX is broadcast in Mode-B SITOP (AMTOR) on a frequency of 518 kHz. This frequency has been agreed upon as the worldwide standard.

NAVTEX can be monitored in such fashion that a vessel would see only information of interest and, in general applications, not see the same message twice. This unique feature of NAVTEX, now contained in the PK-232, together with the new NAVSTN and NAVMSG commands, allows the user to monitor only those messages of importance.

All NAVTEX messages are prefixed by the four characters "ZCZC" and a four character preamble as diagrammed below.

```
ZCZC AA99
||||
|||---Serial Number 2nd Digit
|||
|||---Serial Number 1st Digit
||
|----Message Classification (A-Z)
|
|----NAVTEX Station Identification (A-Z)
```

The first letter of the preamble identifies the NAVTEX transmitter. Transmitter identification letters can be any of the characters A through Z. This limits the number of NAVTEX stations in a given area to 26. The new NAVSTN command can be used to selectively monitor or reject specific NAVTEX transmitters.

The second letter of the preamble is the NAVTEX message classification. Currently, the letters A through J define a message class, while the letters K through Z are reserved for future use. The new NAVMSG command can be used to selectively monitor or reject specific classes of NAVTEX messages.

The two numbers in the preamble, from 00 through 99, form a unique serial number for each NAVTEX message.

In the NAVTEX mode, the PK-232 "remembers" the preamble of the 200 most recent messages and will not reprint a message that has the same preamble if it has already been received without a significant number of errors.

Europe presently leads the United States in the number of NAVTEX stations. There are, however, active NAVTEX stations on the East Coast and stations under construction in other parts of the US. NAVTEX stations are now active in the US and Canada at Sydney, Nova Scotia; Boston, Massachusetts; Portsmouth, Virginia; Miami, Florida and New Orleans, Louisiana. Some of the

planned NAVTEX stations will be located at San Francisco and Long Beach, California; Astoria, Oregon; Kodiak and Adak, Alaska and Honolulu, Hawaii.

Hardware Fix

AEA has announced that free replacement capacitors are available for certain PK-232s which may have defective capacitors at C-58 in the tone adjust circuit. Symptoms are that you cannot hold 1200-Hz tone calibration. The faulty part, C-58, is tiny, blue, numbered 223J X7R and located directly behind the bar-graph tuning display. The correct capacitor is a 0.022 uF NPO ceramic and is buff or yellow in color.

Affected PK-232 serial numbers are 13,815-14,156 (but possibly not all in that sequence), 14,175-14,235, 14,261-14,600, 14,614-14,710, 16,800, 16,821-17,240, 17,341-17,424.

The frequency can be adjusted to 1200 Hz with the bad capacitor, but will drift because the capacitor has the wrong electrolyte and dielectric constant. After replacing the capacitor, the tone frequency potentiometers must be readjusted: R-167 to 1200 Hz, R-165 to 2200 Hz, R-164 to 2310 Hz, R-168 to 2110 Hz. R-167 and R-168 interact. R-167 must always be adjusted first and R-168 adjusted last. After adjusting R-168, then readjust R-167 and, then, R-168 again.

from CompuServe's HamNet and by Dave Tyler,
N6DRT @ W6CUS from The I-Frame,
The Newsletter of The Southern
California Digital Communications Council

KANTRONICS ADDS BATTERY BACKUP AND WATCHDOG TIMER

Many Kantronics customers in Japan wanted battery backup for their digipeaters and KA-Nodes. And, as a result, Kantronics has released new firmware (revision 2.83) that allows the addition of a battery supplied RAM socket to backup all RAM. The socket includes a lithium battery and circuitry for holding RAM. Firmware revision 2.83 also includes the following new features:

A path listing of digipeaters when the JHEARD or NODES command is executed.

A subject field for the Personal Packet Mailbox feature.

Added allowed characters and controls for CW with the Kantronics All-Mode (KAM).

As of April 1, all Kantronics units have been shipped with this new firmware (the battery socket is extra).

New Watchdog Timer

A new watchdog timer board is available for the Kantronics KPC-1, KPC-2 and KPC-2400. The 1-1/2-inch square circuit board is installed inside the case and requires only four solder joints (KAM and KPC-4 units now come with this feature, standard). For upgrades, the board costs \$12.50 including shipping and handling.

from Kantronics Packet Newsletter

BRINCOMM TECHNOLOGY MOVES

Brincomm Technology, the producer of packet-radio terminal software for the Apple Macintosh computer, has moved and now may be addressed at 2404 Stockton Pl, Marietta, GA 30066. Also, their new telephone number is 404-924-2950.

GATEWAY CONTRIBUTIONS

Submissions for publication in Gateway are welcome. You may submit material via the US mail to:

Gateway
Stan Horzepa, WA1LOU
75 Kreger Drive
Wolcott, CT 06716-2702

or electronically, via CompuServe to user ID 70645,247. Via telephone, your editor can be reached at 203-879-1348 on evenings and weekends, and he can switch a modem on line to receive text at 300, 1200, or 2400 bauds.

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Stan Horzepa, WA1LOU
Editor

Larry E. Price, W4RA
President

David Sumner, K1ZZ
Executive Vice President

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